

PATH ANALYTIC STUDY OF SOCIAL ENVIRONMENT VARIABLES
AND SENIOR SECONDARY SCHOOL STUDENTS' INTEREST IN
SCHOOL IN THE SOUTHERN EDUCATIONAL ZONE OF CROSS
RIVER STATE, NIGERIA.

Dr. Henry Ojating

**Department of Educational Foundations and Administration,
Cross River University of Technology,
Calabar.**

Abstract

The study investigated the causal relationships among some social environment variables and senior secondary school students' interest in school in Southern Educational Zone of Cross River State, Nigeria. A five-variable hypothesized model as designed for the purpose of determining the causal links between the independent variables and senior secondary school students' interest in school. Two research questions guided the study. Regression analysis and path analysis procedures were utilized to analyze the data collected. The findings, among others, indicated that the total direct effects of the predictor variables on interest in school was 57.99%, while 42.01% was due to indirect effects. These percentages indicated that the independent sub-variables exerted more of direct effect than indirect effect on senior secondary school students' interest in school. It was recommended, among other things, that secondary schools should initiate and exploit the platform of Parent Teacher Association (PTA) to sensitize parents on the importance and ways of stimulating their wards and children academically.

Key words: Path Analysis, Social Environment, Interest; School, Secondary School Students.

Interest refers to likes, dislike, preferences and aspirations that tend to distinguish individuals in their daily activities (Joshua, 2005). Joshua further asserted that people tend to pay more attention or get more involved and more dedicated in what interests them most. The revival of interest as an educationally relevant motivational concept in its own right was initiated by Hams Schiefele in the late 1970's. Together with a small group of colleagues, he developed an educationally oriented theory of interest and stimulated research into e theory (Schiefele, Krapp, Prensel, Heiland and

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Kasten, 1983). He argued that the prevailing concepts of achievement motivation were insufficient from an educational stand point for several reasons, the most important of which was its inability to address the content specificity of a learners motivation to learn.

Contemporary approaches to the concept of interest refer to interest as a motivational variable concerned with an individual's engagement with particular classes of objects and activities. A child who is favourably disposed to going to school and taking active part in school work is said to be interested in school. Ezewu (1987) opined that in a cumulative form, the child develops certain characteristics like attitudes, motivation (interest) and self- concept which are capable of either promoting or inhibiting his learning.

The growing loss of interest in school observed among secondary school students in Nigeria she Id be a real source of great concern for stakeholders of education. The obvious apathy for undertaking school tasks often finds expression in young learners out rightly leaving school on their own or indulging in anti-social activities that earn them ultimate expulsion. Some of these students, however, stay on in the school system "progressing" from one class to the other with recourse to all forms of examination malpractice.

Ekundayo (2010) asserted at personality traits like honesty, hard work, punctuality, self-denial and self-discipline, which are necessary conditions for effective citizenship have disappeared in the secondary schools. A secondary school learner who has lost interest in school will do nothing on his own to enhance achievement in school subjects. Abolade in Omoregie (2005) listed problems manifested by secondary school students as examination malpractices, cultism, juvenile delinquency, drug abuse and academic incompetence among others.

An earlier study by Ojating (2006) had linked the learner's social environment with his/her interest in school in this study the researcher is interested in designing and validating a causal model of social environment variables and senior secondary school students' interest in school. A causal model, otherwise referred to as "path analysis", is a causal network for understanding relationships among variables (Babbie, 1986). Pedhazur (1982) defines it as a model building technique for studying the direct and indirect effects of variables hypothesized as causes of variables treated as effects. Path analysis uses multiple correlation and multiple regression as its statistics. This study explores the causal network of social environment variables and senior secondary school

students' interest in school in the Southern Educational Zone of Cross River State, Nigeria.

Statement of the Problem

Lack of interest in school observed among secondary school learners in Nigeria is a growing concern for stakeholders of education. Engagement in real school tasks as a prerequisite for school success is no longer considered necessary. This unhealthy situation may be attributable to the fact that, over time, school learners at various levels have always been assessed mainly on cognitive grounds. Affective learning objectives seem to be relegated to the background. According to McLeod (1992), most studies on cognitive issues conducted in the past excluded affective factors from their considerations due to the profound influence of behaviourism in educational psychology, which had interest in non-cognitive aspects of learning such as beliefs, emotions, attitudes, and motivation. Thus, a secondary school learner who showed little or no interest in school was never assessed on that basis. The study explores the causal links (both direct and indirect) between some social environment variables and senior secondary school students' interest in school in the Southern Educational Zone of Cross River State.

Purpose of the study

The study was designed mainly to investigate the causal relationships among some social environment variables (Parental socio-economic status, parental academic stimulation, peer group influence and teacher-student relationship and senior secondary school students' interest in school.

Method

An ex-post facto design was used for the study. The study covered all the students in the fifteen secondary schools in the southern educational zone of Cross River State. The population comprised all the senior secondary school students in the education zone. Stratified random sampling technique was used to select six hundred students (600) comprising SS1 and SS2 students from the fifteen (15) secondary schools in the five Local Government Areas of the southern educational zone of Cross River State for the study. A researcher -structured questionnaire developed by the researcher was used for data collection. The questionnaire contained thirty one (31) items which were structured on a 4 - point Likert scale ranging from strongly agree (4 points) to the strongly disagree (1 point) and a 7-item check-list for socio-economic status of parents. The questionnaire comprised two (2) main parts - A and B. Part A which sought to elicit personal information on the variables that guide the study was divided into five (5) sub-

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sections comparing a total of thirty one (31) items with six (6) items for each of the independent variables except socio-economic status which had 7 items. The dependent variable interest in school had six (6) items. Validation of the instrument was done by an expert in test and measurement in the University of Calabar. The reliability of the instrument was also established through test-retest which yielded co-efficient values from 0.50 to 0.75. Six hundred questionnaires were administered by the researcher on the subjects but five hundred and eight (558) were properly filled, retrieved and used for the analysis. The data obtained were statistically analyzed with multiple correlation analysis, multiple regression analysis and path analysis procedures.

Hypothesized Causal Model Involving Social Environment Variables and Senior Secondary School Students' Interest in School.

On the basis of theoretical consideration and knowledge, the researcher designed a five-variable hypothesized recursive path model which addressed the linkages among variables in the study. The model, as shown in Figure 1, denotes one way causal flow between variables and les in the model are linear, additive and assumptions of path analysis procedure suggested by Kerlinger (1980) and Pedhazur (1984).

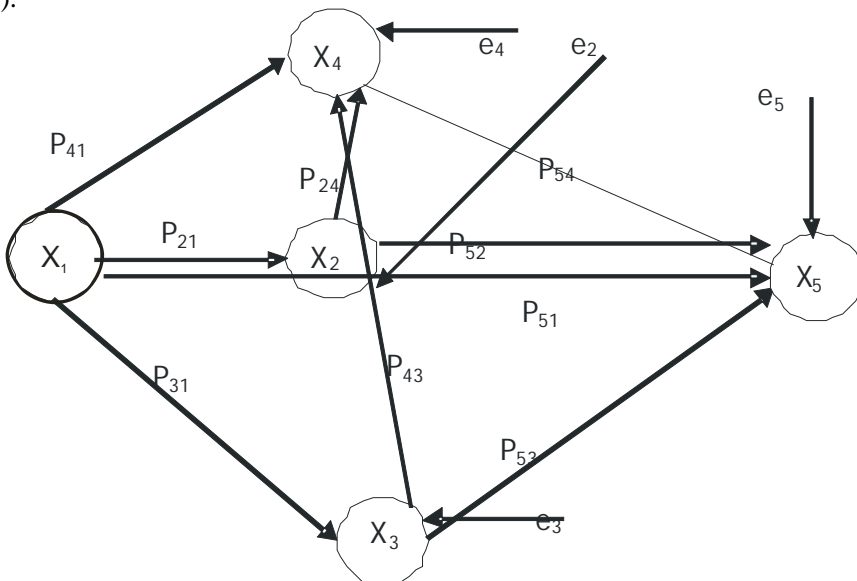


Figure 1: A Hypothesized Causal Model of the Four Social Environment Variables and senior second a school students' interest in school.

Key:

- X1 Socio-economic status (SES)
- X2 Parental academic stimulation (PAS)
- X3 Peer group influence (PGI)
- X 4 Teacher-student relationship (TSR)
- X 5 Interest in school (INS)

The structural equations implied in the hypothesized model in figure 1 are:-

$$X_1 = e_1$$

$$X_2 = P_{21} X_1 + e_2$$

$$X_3 = P_{31} X_1 + e_3$$

$$X_4 = P_{42} X_2 + P_{41} X_1 + e_4$$

$$X_5 = P_{54} X_4 + P_{53} X_3 + P_{52} X_2 + P_{51} X_1 + e_5$$

The residual variables $e_1, e_2, e_3, \dots, e_5$, in the above equations refer to the effects of variables outside the model that are not accounted for by the independent variables.

Data Analysis and Results

The mean scores and standard deviations of subjects on the social environment variables and students' interest in school considered in the study are presented in Table 1.

Variables of the Study	N	Mean	SD
Peer group influence	558	18.10	3.51
Teacher - student relationship	588	18.41	3.42
Parental academic stimulation	588	19.27	3.42
Socio-economic status	588	17.83	4.17
Interest in School	588	20.47	3.40

The result in table one (1) shows that the mean scores for the independent variables peer group influence, teacher-student relationship, parental academic stimulation and parent's socio-economic status range from 17.83 to 19.27, while the standard deviations range from 3.42 to 4.17. The mean and standard deviation of students' interest in school stand at 20.47 and 3.40 respectively.

Presentation of Results

Research Question One

What Proportions of the Total Effects of the Four Social Environment Variables on Students' Interest in School are Direct and Indirect?

To answer this research question, we first derive the total effects representing values of the zero-order correlation between each of the social environment variables and senior secondary school students' interest in school. The direct effects are the standardized regression weights from the predictive equations in the recursive model. These standardized regression weights are clearly shown in Table 3 which summarizes the relative contributions of ea predictor variable to senior secondary school students' interest in school. The indirect effects represent the difference between these Pearson's (or zero-order) correlation coefficients and the standardized weights.

Table 2: Proportions of the Total Effects of the Predictors of Students' Interest in School that are Direct and Indirect

Variables	Total Effect	Direct Effects	Indirect Effect
X ₁ (SES)	.031	.014	.017
X ₂ (PAS)	.446	.333*	.113
X ₃ (PGI)	.286	.142*	.144
X ₄ (TSR)	.332	.146*	.186
Total	1.095	.635	.460
Percentage (%)	100	57.99	42.01

* = significant at .05 level

Data in Table 2 shows that the proportion of direct effects of the social environment variables or senior secondary school students' interest in school stands at 57.99%. The proportion of indirect effects, on the other hand, accounts for 42.01%. These results indicate that the four social environment variables exe more of direct than indirect effect on students' interest in school. That is, changes in senior secondary school students' interest in school could be more easily achieved through direct means when the same social environment variables are taken into consideration and used for the same purpose.

Table 3: Summary of Multiple Regression Analysis of the Relative Contributions of the Individual Social Environment Variable to the Prediction of Students' Interest in School.

Variables	Unstandardized Regression Weights	Standardized Regression Weights	SE _b	t-ratio	P-Level
(SES)	.01175	.014	.030	.388	.699
(PAS)	.331	.333	.042	7.803	.000*
(STR)	.145	.146	.042	3.478	.001*
(PGI)	.138	.142	.038	3.592	.000*

SE_b = Standard Error of Estimate

* = Significant at .0:1 probability level

Research Question Two

What are the Significant Paths in the Five-Variable Model through which the Predictor Variables Determine Senior Secondary School Students' Interest in School?

Table 4 shows the various path coefficients in the in the recursive hypothesized path model obtained through a series of regression analyses from the original path equations. The coefficients were expressed in betel weights. Paths with standardized coefficients significant at .01 probability level were retained, otherwise, they were trimmed to obtain a more parsimonious model.

Table 4: Significant paths through which the independent variables determine students' interest in school.

Paths	Path Coefficient	P-level
P ₂₁	.029	.496
P ₃₁	.021	.626
P ₄₁	.012	.758
P ₄₂	.446	.000*
P ₄₃	.265	.000*
P ₅₁	.014	.699
P ₅₂	.333	.000*
P _{S3}	.142	.000*
P _{S4}	.146	.001*

*= Significant at .01 level

The results in Table 4 show that out of the 9 paths in the hypothesized model, 5 were significant at .01 probability level, while 4 paths were not significant. Based on the result, the 4 paths not significant were trimmed leaving a new and most meaningful causal model as shown in figure 2.

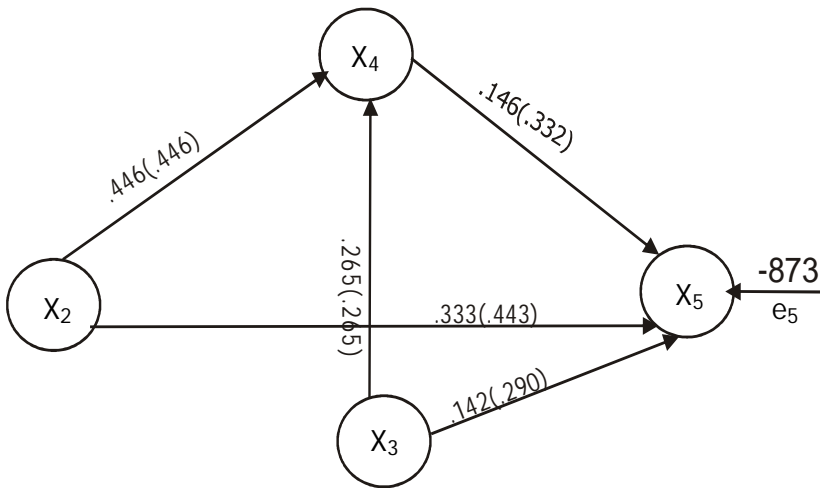


Figure 2: New causal model (trimmed) of the hypothesized social environment variables on senior secondary School students' interest in school.

Figure 2 shows that five out of the nine hypothesized paths survived the trimming. The numbers on the pathways are path coefficients and the zero order correlation coefficients are path coefficients and the zero order correlation coefficients are in parenthesis.

Validation of the New Model

To verify the efficacy of the new model, the reproduced correlation coefficients (obtained by formula) were compared to the original correlation coefficient. Table 5 shows the original and reproduced correlation coefficient matrix of the social environment variables and senior secondary school students' interest in the school.

Table 5: The Original and Reproduced Correlation Matrix of Social of Social Environment Variables and Students' Interest in School.

Variables	SES	PAS	PGE	TSR	INS
1. SES	1.000	.029	.021	.025	.031
2. PAS	.029	1.000	.314	.446	.443
3. PGI	.021	.001	1.000	.265	.286
4. TSR	.025	.446	.140	1.000	.332
5. INS	.031	.443	.290	.332	1.000

The discrepancies between the original and reproduced correlations shown in Table 5 are quite small indicating that the pattern of correlations in the observed data is consistent with the parsimonious model in figure 2.

Discussion

Data in Table shows that the four social environment variables ($X_1, X_2, X_3,$ and X_4) accounted for 57.99% of direct effects on senior secondary school students' interest in school. The indirect effect of the independent variables on interest in school accounted for 42.01%. These percentages indicate that the four social environment variables used in this study exert more of direct than indirect effect on senior secondary school students' interest in school. These findings support wide range of studies which have found strong direct causal links between environmental variables and affective outcomes of students (e.g. Way, 2011; Evans and Hygge, 2007).

Furthermore, Table 4 shows that out of the 9 paths in the hypothesized model, 5 were significant at .01 probability level, while 4 paths were not significant. These significant paths eventually produced the most meaningful and statistically significant causal model for explaining the causal relationships among social environment variables and senior secondary students' interest in the school.

Conclusion

Based on the findings of this study, the four social environment variables exert more of direct than indirect effect on students' interest in school. Three of the independent variables: Peer group influence, teacher student relationships and rental academic stimulation were each found to have direct significant causal link with senior secondary school students' interest in school.

Recommendations

The researcher recommends that:

- i. In view of the direct significant effect of parental academic stimulation on students' interest in school, parents on the platform PTA meetings should be properly sensitized on the need and ways of stimulating their children academically.
- ii. Only trained teachers should be recruited to teach in secondary schools. Teacher re-training programmes should be sustained.
- iii. Counseling services in secondary schools should be designed to educate students on how to manage peer relationships.

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